

Date: Friday, 5/19/2006 10:03:19 AM  
User: Linda Lacelle

## Process Sheet

SPI: 7 2006-01

Customer : CU-DAR001 Dart Helicopters Services Drawing Name : BRACKET ASSEMBLY  
Job Number : 27178 -2 Part Number : D3155041  
Estimate Number : 10679 Drawing Number : D3155 REV C  
P.O. Number : N/A Project Number : N/A  
This Issue : 5/19/2006 S.O. No. : N/A Drawing Revision : C  
Prsht Rev. : NC Material : N/A  
First Issue : N/A Type : MACHINED PARTS Due Date : 6/2/2006 Qty: 10 Um: Each  
Previous Run : 25282  
Written By :  
Checked & Approved By :  
Comment : Est B 03.02.03 Reformat KJ/RF

## Additional Product

Job Number:



Seq. #: Machine Or Operation: Description :

1.0 M6061T6B1000X02000 6061-T6 Bar 1.0" x 2.0"



Comment: Qty.: 0.6125 f(s)/Unit Total: 6.1247 f(s)  
Material: 6061-T6/-T651 (QQ-A-200/8 or QQ-A-225/8)  
(M6061T6B2.000x01.000)  
Batch: M101000

SD 06.05.20

2.0 BAND SAW BAND SAW



Comment: BAND SAW  
Cut blanks: (2.000" x 1.000") x 6.87" Long Bar

SD 06.05.20

3.0 HAAS1 HAAS CNC VERTICAL MACHINING #1



Comment: HAAS CNC VERTICAL MACHINING #1  
1-Machine as per Folio FA315 and Dwg D3155  
2-Deburr and Tumble

SD 06.05.20

4.0 QC2 INSPECT PARTS AS THEY COME OFF MACHINE







Comment: INSPECT PARTS AS THEY COME OFF MACHINE

SD 06.05.20

P10

PT8

| W/O:     |      | WORK ORDER CHANGES  |    |          |     |                                 |                          |
|----------|------|---|----|----------|-----|---------------------------------|--------------------------|
| DATE     | STEP | PROCEDURE CHANGE  | By | Date     | Qty | Approval<br>Mfg / Design<br>Mgr | Approval<br>QC Inspector |
| 06-06-01 | 4    | W/O split for Qty of 10 parts to proceed. (See NCR below) | J  | 06-06-01 | 10  | W                               | J<br>06-06-01            |
|          |      |   |    |          |     |                                 |                          |

| NCR:     |      | WORK ORDER NON-CONFORMANCE (NCR)   |  |  |                |   |   |   |
|----------|------|--|--|--|----------------|---|---|---|
| DATE     | STEP | Description of NC<br>Section A   | Corrective Action Section B  |  |                | Verification<br>Section C   | Approval<br>Design Mgr  | Approval<br>QC Inspector  |
|          |      |  | Initial<br>Design Mgr  | Action Description<br>Design Mgr   | Sign &<br>Date |   |   |   |
| 06-06-05 | 3    | 3<br>- 2 parts with .130 dim too thin → .1005<br>- Parts not sitting properly in jig<br>- parts replaced | <br>QSM | <del>These 3 parts are acceptable</del><br>- These 3 parts are acceptable<br>See Attached E-mail<br>- The 3 parts under tolerance were replaced onto the original. | SD<br>06.06.21 | <br>06-06-05 | <br>06-06-05 | <br>06-06-05 |
|          |      |  |  |  |                |   |   |   |
|          |      |  |  |  |                |   |   |   |

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes ☐ No ☒ DQA:  Date: 06/06/06

NOTE: Date & initial all entries

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_



Date: Friday, 5/19/2006 10:03:19 AM  
User: Linda Lacelle

## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: BRACKET ASSEMBLY

Job Number: 27178

Part Number: D3155041

Job Number:



Seq. #:

Machine Or Operation:

Description :

5.0

QC5

INSPECT WORK TO CURRENT STEP



(3)

Comment: INSPECT WORK TO CURRENT STEP

*Final*

6.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: HAND FINISHING RESOURCE #1

Chemical Conversion Coat as per QSI 005 4.1

*am 06-06-08*

(3)

7.0

QC3

INSPECT POWDER COAT/CHEMICAL CONVERSION



Comment: INSPECT POWDER COAT/CHEMICAL CONVERSION

*SAD 06-06-11*

(3)

8.0

D31553

Bushing



Comment: Qty.: 2.0000 Each(s)/Unit Total : 20.0000 Each(s)

Bracket Assembly

Qty

Part number

Description

Batch

2

D3155-3

Bushing

*1324344 (5)*

*1 B 27189*

*06-09-20*

*pro*

9.0

SMALL FAB 1

SMALL & MEDIUM FAB RESOURCE 1



Comment: SMALL & MEDIUM FAB RESOURCE 1

Press fit bushing as per Dwg D3155

*SAD 06-09-20*

3

10.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

*SB 06/09/20*

(3)

11.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Identify and Stock

Location:

*57410*

*06/9/21*

(3)

12.0

DC

DOCUMENT CONTROL



Comment: DOCUMENT CONTROL

Inspection Level 21

*06/09/26*

(3)

Job Completion



*W 06/09/21*

| W/O: |      | WORK ORDER CHANGES |    |      |     |                                 |                          |
|------|------|--------------------|----|------|-----|---------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE   | By | Date | Qty | Approval<br>Mfg / Design<br>Mgr | Approval<br>QC Inspector |
|      |      |                    |    |      |     |                                 |                          |
|      |      |                    |    |      |     |                                 |                          |

| NCR:     |      | WORK ORDER NON-CONFORMANCE (NCR)  |                              |   |                 |                           |                              |                          |
|----------|------|---|------------------------------|---|-----------------|---------------------------|------------------------------|--------------------------|
| DATE     | STEP | Description of NC<br>Section A  | Corrective Action Section B  |   |                 | Verification<br>Section C | Approval<br>Design Mgr       | Approval<br>QC Inspector |
|          |      |   | Initial<br>Design Mgr        | Action Description<br>Design Mgr  | Sign &<br>Date  |                           |                              |                          |
| 06/09/20 | 5    | 2 parts damaged during<br>press fitting the bushing.<br>Press went into Mat'l<br>roughly .010 → .015. | As per<br>QST 42<br>06/06/27 | Buff out damage as<br>necessary. Parts acceptable.<br>touch-up with Alocline. | SAD<br>06/09/20 | SB<br>06/09/20            | As per<br>QST 42<br>06/06/27 | 06/06/27                 |
|          |      |   |                              |   |                 |                           |                              |                          |
|          |      |   |                              |   |                 |                           |                              |                          |

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes ☒ No ☐ DQA: ☒ \_\_\_\_\_ Date: 06/05/20

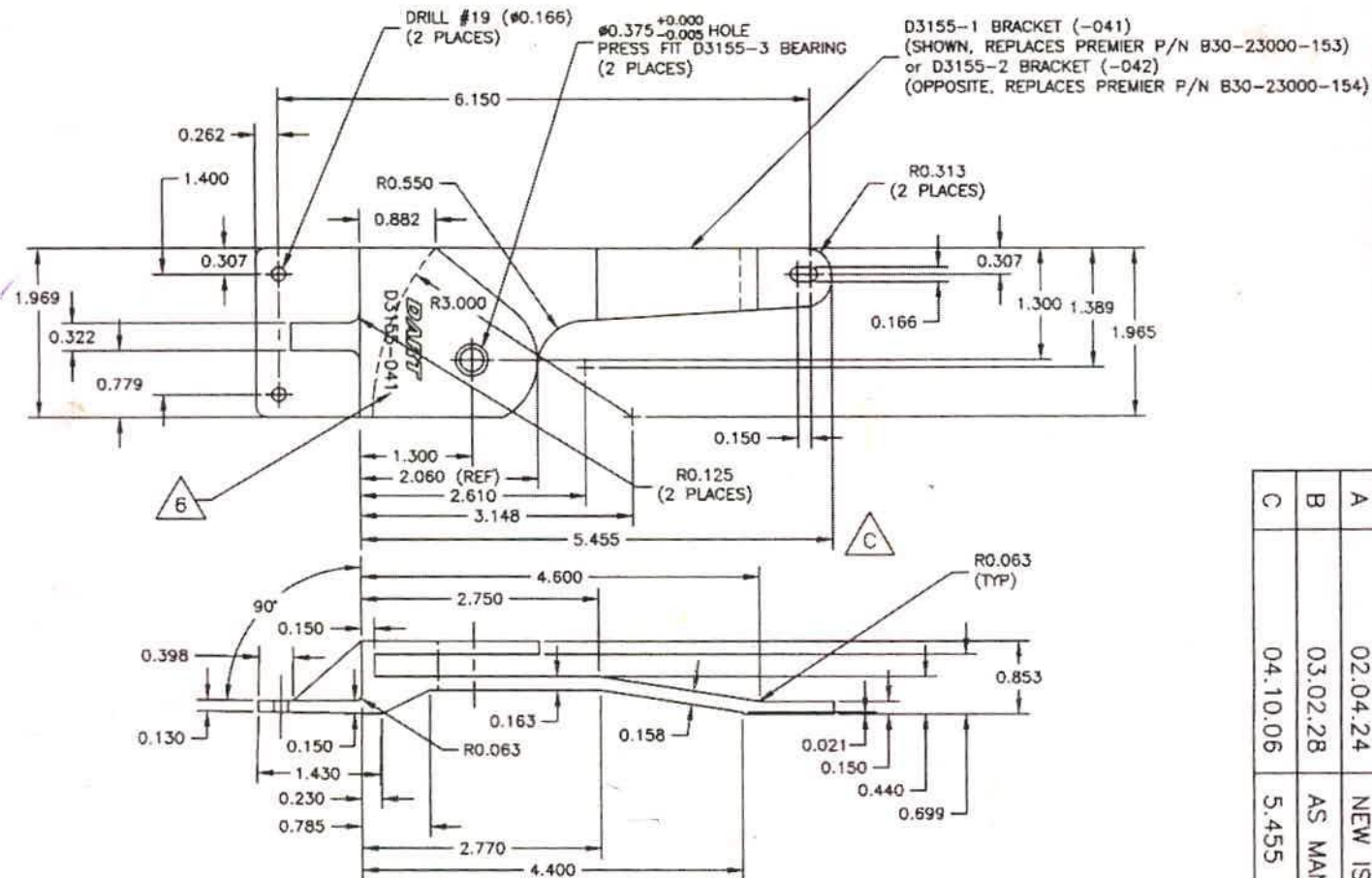
NOTE: Date &amp; initial all entries

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_



**DART**

| DESIGN                     | DRAWN BY                    | DART AEROSPACE LTD<br>HAWKESBURY, ONTARIO, CANADA |
|----------------------------|-----------------------------|---|
| CHECKED <i>[Signature]</i> | APPROVED <i>[Signature]</i> | REV. C  |
| DATE 04.10.06              | TITLE                       | SHEET 1 OF 2                                      |
|                            | D3155                       | SCALE 1:2   |
|                            | BRACKET ASSEMBLY            |   |
| A                          | 02.04.24                    | NEW ISSUE   |
| B                          | 03.02.28                    | AS MANUFACTURED                                   |
| C                          | 04.10.06                    | 5.455 WAS 5.550                                   |

**D3155-041 BRACKET ASSEMBLY**

(SHOWN, REPLACES PREMIER P/N B30-23000-11)

**D3155-042 BRACKET ASSEMBLY**

(OPPOSITE, REPLACES PREMIER P/N B30-23000-12)

**D3155-1/-2 BRACKET**

- 1) MATERIAL: 6061-T6/-T651 (QQ-A-200/8 OR QQ-A-225/8) BAR  
(REF DART SPEC. M6061T6B)
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) ALL DIMENSIONS ARE IN INCHES
- 5) BREAK ALL SHARP EDGES 0.005 TO 0.015
- 6) ENGRAVE DART P/N & LOGO AS SHOWN

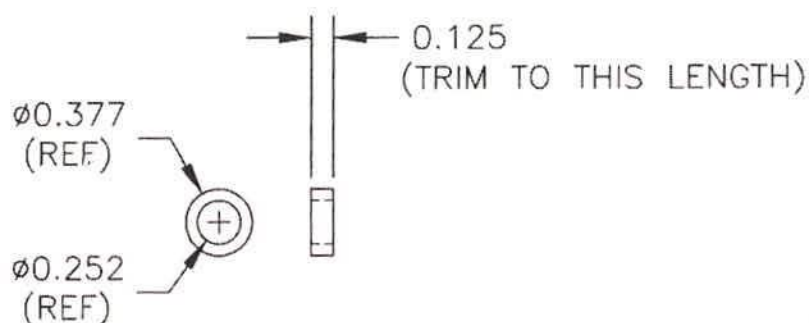
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|                  |                |   |                        |
|------------------|----------------|---|------------------------|
| DESIGN<br>H      | DRAWN BY<br>LF | DART AEROSPACE LTD<br>HAWKESBURY, ONTARIO, CANADA |                        |
| CHECKED<br>H     | APPROVED<br>H  | DRAWING NO.<br>D3155                              | REV. C<br>SHEET 2 OF 2 |
| DATE<br>04.10.06 |                | TITLE<br>BRACKET ASSEMBLY                         | SCALE<br>1:1           |

RELEASED  
04.11.23



REFERENCE ONLY

### D3155-3 BUSHING

- 1) MAKE FROM P/N SBS-3-3 (SOLID BAR) OR SS-812-20 (TUBING)  
POSSIBLE SUPPLIER: SYMMCO
- 2) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 3) ALL DIMENSIONS ARE IN INCHES
- 4) BREAK ALL SHARP EDGES 0.005 TO 0.010

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Part Name: \_\_\_\_\_

Work Order: **27178**

Part Number: **3155-041**

Rev: \_\_\_\_\_

Page 1 of 1

# FIRST ARTICLE INSPECTION CHECKLIST

☒ First Article ☐ Prototype

|       | Tolerance        | Actual Dimension | Accept | Reject | Method of Inspection | Comments |
|-------|------------------|------------------|--------|--------|----------------------|----------|
| Ø.166 |                  | Ø.167            | /      |        |                      |          |
| .262  |                  | .262             | /      |        |                      |          |
| 1.400 |                  | 1.401            | /      |        |                      |          |
| .307  |                  | .314             | /      |        |                      |          |
| .322  |                  | .325             | /      |        |                      |          |
| 1.969 |                  | 1.969            | /      |        |                      |          |
| .779  |                  | .776             | /      |        |                      |          |
| .882  |                  | .878             | /      |        |                      |          |
| 2.060 |                  | 2.059            | /      |        |                      |          |
| 1.300 |                  | 1.298            | /      |        |                      |          |
| Ø.375 | + .000<br>- .005 | Ø.375            | /      |        |                      |          |
| 1.300 |                  | 1.310            | /      |        |                      |          |
| 1.965 |                  | 1.968            | /      |        |                      |          |
| .166  |                  | .165             | /      |        |                      |          |
| .307  |                  | .314             | /      |        |                      |          |
| .398  |                  | .398             | /      |        |                      |          |
| .130  |                  | .128             | /      |        |                      |          |
| .150  |                  | .155             | /      |        |                      |          |
| .150  |                  | .148             | /      |        |                      |          |
| 2.750 |                  | 2.755            | /      |        |                      |          |
| 4.600 |                  | 4.603            | /      |        |                      |          |
| .853  |                  | .847             | /      |        |                      |          |

Inspected by: **SA**  
Date: **06.05.20**

Audited by: **J-F**  
Date: **06/05/21**

Prototype Approval: \_\_\_\_\_  
Date: \_\_\_\_\_

Revised by: **KJ-RF** Approved: \_\_\_\_\_





## Linda Lacelle

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**From:** David Shepherd [dshepherd@dartaero.com]  
**Sent:** Monday, June 05, 2006 12:07 PM  
**To:** 'Jason Murdoch'  
**Cc:** 'Linda Lacelle'  
**Subject:** RE: d3155

Jason,

These parts are acceptable deviations.

David

---

**From:** Jason Murdoch [mailto:jmurdoch@dartaero.com]  
**Sent:** Monday, June 05, 2006 9:51 AM  
**To:** davids@dartaero.com  
**Subject:** FW: d3155

Any chance I can get an answer on these?

[jmurdoch@dartaero.com](mailto:jmurdoch@dartaero.com)

Q.C.Inspector

---

**From:** Jason Murdoch [mailto:jmurdoch@dartaero.com]  
**Sent:** May 31, 2006 9:45 AM  
**To:** davids@dartaero.com  
**Subject:** d3155

Good day. I have some parts off the haas that are under tol. If you look at dwg 3155-041/-042 the thickness of mat'l should be .130, and the taper I have comes down to .110 at the very tip of the mat'l. These holes are only for bolting on to the space doors to keep the lock and rod mechanism up higher. 1<sup>st</sup> : .110 ; 2<sup>nd</sup> : .110 ; 3<sup>rd</sup> : .114. Are these parts acceptable to you?

[jmurdoch@dartaero.com](mailto:jmurdoch@dartaero.com)

Q.C.Inspector